

6700	6860
6705	6865
6710 /1/	6720 /1/

/1/ These frequencies may be assigned for unpaired use.

(7) 10 MHz bandwidth channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
6545 /1/	6715 /1/
6555 /1/	6725 /1/
6565	6735
6585	6745
6595	6755
6605	6765
6615	6775
6625	6785
6635	6795
6645	6805
6655	6815
6665	6825
6675	6835
6685	6845
6695	6855
6705	6865
6535 /2/	6575 /2/

/1/ These frequencies may be assigned or unpaired use.

/2/ Available only for emergency restoration, maintenance bypass, or other temporary-fixed purposes. Such uses are authorized on a non-interference basis to other frequencies in this band. Interference analysis required by § 101.105 does not apply to this frequency pair.

(j) 10,550 to 10,680 MHz. 5 MHz authorized bandwidth.

(1) 400 kHz bandwidth channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
10605.225	10670.225
10605.625	10670.625
10606.050	10671.050
10606.450	10671.450
10606.875	10671.875
10607.275	10672.275

10607.725	.....	10672.725
10608.125	.....	10673.125
10608.550	.....	10673.550
10608.950	.....	10673.950
10609.375	.....	10674.375
10609.775	.....	10674.775
10610.225	.....	10675.225
10610.625	.....	10675.625
10611.050	.....	10676.050
10611.450	.....	10676.450
10611.875	.....	10676.875
10612.275	.....	10677.275
10612.725	.....	10677.725
10613.125	.....	10678.125
10613.550	.....	10678.550
10613.950	.....	10678.950
10614.375	.....	10679.375
10614.775	.....	10679.775

(2) 800 kHz bandwidth channels:

Transmit (receive) (MHz)		Receive (transmit) (MHz)
10605.425	.....	10670.425
10606.250	.....	10671.250
10607.075	.....	10672.075
10607.925	.....	10672.925
10608.750	.....	10673.750
10609.575	.....	10674.575
10610.425	.....	10675.425
10611.250	.....	10676.250
10612.075	.....	10677.075
10612.925	.....	10677.925
10613.750	.....	10678.750
10614.575	.....	10679.575

(3) 1.25 MHz bandwidth channels:

Transmit (receive) (MHz)		Receive (transmit) (MHz)
10550.625	.....	10615.625
10551.875	.....	10616.875
10553.125	.....	10618.125
10554.375	.....	10619.375
10555.625	.....	10620.625
10556.875	.....	10621.875
10558.125	.....	10623.125
10559.375	.....	10624.375

10560.625	.....	10625.625
10561.875	.....	10626.875
10563.125	.....	10628.125
10564.375	.....	10629.375
10565.625	.....	10630.625
10566.875	.....	10631.875
10568.125	.....	10633.125
10569.375	.....	10634.375
10570.625	.....	10635.625
10571.875	.....	10636.875
10573.125	.....	10638.125
10574.375	.....	10639.375
10575.625	.....	10640.625
10576.875	.....	10641.875
10578.125	.....	10643.125
10579.375	.....	10644.375
10580.625	.....	10645.625
10581.875	.....	10646.875
10583.125	.....	10648.125
10584.375	.....	10649.375
10585.625	.....	10650.625
10586.875	.....	10651.875
10588.125	.....	10653.125
10589.375	.....	10654.375
10590.625	.....	10655.625
10591.875	.....	10656.875
10593.125	.....	10658.125
10594.375	.....	10659.375
10595.625	.....	10660.625
10596.875	.....	10661.875
10598.125	.....	10663.125
10599.375	.....	10664.375
10600.625	.....	10665.625
10601.875	.....	10666.875
10603.125	.....	10668.125
10604.375	.....	10669.375
10605.625	.....	10670.625
10606.875	.....	10671.875
10608.125	.....	10673.125
10609.375	.....	10674.375
10610.625	.....	10675.625
10611.875	.....	10676.875
10613.125	.....	10678.125
10614.375	.....	10679.375

(4) 2.5 MHz bandwidth channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
10551.25	10661.25

10553.75	.....	10618.75
10556.25	.....	10621.25
10558.75	.....	10623.75
10561.25	.....	10626.25
10563.75	.....	10628.75
10566.25	.....	10631.25
10568.75	.....	10633.75
10571.25	.....	10636.25
10573.75	.....	10638.75
10576.25	.....	10641.25
10578.75	.....	10643.75
10581.25 /1/	.....	10646.25 /1/
10583.75 /1/	.....	10648.75 /1/
10586.25 /1/	.....	10651.25 /1/
10588.75 /1/	.....	10653.75 /1/
10591.25 /1/	.....	10656.25 /1/
10593.75 /1/	.....	10658.75 /1/
10596.25 /1/	.....	10661.25 /1/
10598.75 /1/	.....	10663.75 /1/
10601.25	.....	10666.25
10603.75	.....	10668.75
10606.25 /1/	.....	10671.25
10608.75	.....	10673.75
10611.25 /1/	.....	10676.25
10613.75	.....	10678.75

/1/ These frequencies are also available for DEMS licensed, in operation, or applied for prior to July 15, 1993.

(5) 3.75 MHz bandwidth channels:

Transmit (receive) (MHz)		Receive (transmit) (MHz)
10553.125	.....	10618.125
10558.125	.....	10623.125
10563.125	.....	10628.125
10568.125	.....	10633.125
10573.125	.....	10638.125
10578.125	.....	10643.125
10583.125	.....	10648.125
10588.125	.....	10653.125
10593.125	.....	10658.125
10598.125	.....	10663.125
10603.125	10668.125

(6) 5 MHz bandwidth channels:

Transmit (receive) (MHz)		Receive (transmit) (MHz)
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10552.5	10617.5
10557.5	10622.5
10562.5	10627.5
10567.5	10632.5
10572.5	10637.5
10577.5	10642.5
10582.5	.....	10647.5
10587.5	.....	10652.5
10592.5	.....	10657.5
10597.5	.....	10662.5
10602.5	.....	10667.5

(k) 10,700 to 11,700 MHz. 40 MHz authorized bandwidth.

(1) 1.25 MHz bandwidth channels:

Transmit (receive) (MHz)		Receive (transmit) (MHz)
11130.625	.....	11620.625
11131.875	.....	11621.875
11133.125	.....	11623.125
11134.375	.....	11624.375
11135.625	.....	11625.625
11136.875	.....	11626.875
11138.125	.....	11628.125
11139.375	.....	11629.375
11140.625	.....	11630.625
11141.875	.....	11631.875
11143.125	.....	11633.125
11144.375	.....	11634.375
11145.625	.....	11635.625
11146.875	.....	11636.875
11148.125	.....	11638.125
11149.375	.....	11639.375
11150.625	.....	11640.625
11151.875	.....	11641.875
11153.125	.....	11643.125
11154.375	.....	11644.375
11155.625	.....	11645.625
11156.875	.....	11646.875
11158.125	.....	11648.125
11159.375	.....	11649.375
11160.625	.....	11650.625
11161.875	.....	11651.875
11163.125	.....	11653.125
11164.375	.....	11654.375
11165.625	.....	11655.625
11166.875	.....	11656.875
11168.125	.....	11658.125

11169.375	.....	11659.375
11170.625	.....	11660.625
11171.875	.....	11661.875
11173.125	.....	11663.125
11174.375	.....	11664.375
11175.625	.....	11665.625
11176.875	.....	11666.875
11178.125	.....	11668.125
11179.375	.....	11669.375
11180.625	.....	11680.625
11181.875	.....	11681.875
11183.125	.....	11683.125
11184.375	.....	11684.375
11185.625	.....	11685.625
11186.875	.....	11686.875
11188.125	.....	11688.125
11189.375	.....	11689.375
11190.625	.....	11690.625
11191.875	.....	11691.875
11193.125	.....	11693.125
11194.375	.....	11694.375
11195.625	.....	11695.625
11196.875	.....	11696.875
11198.125	.....	11698.125
11199.375	.....	11699.375

(2) 2.5 MHz bandwidth channels:

Transmit (receive) (MHz)		Receive (transmit) (MHz)
11131.25	.....	11621.25
11133.75	.....	11623.75
11136.25	.....	11626.25
11138.75	.....	11628.75
11141.25	.....	11631.25
11143.75	.....	11633.75
11146.25	.....	11636.25
11148.75	.....	11638.75
11151.25	.....	11641.25
11153.75	.....	11643.75
11156.25	.....	11646.25
11158.75	.....	11648.75
11161.25	.....	11651.25
11163.75	.....	11653.75
11166.25	.....	11656.25
11168.75	.....	11658.75
11171.25	.....	11661.25
11173.75	.....	11663.75
11176.25	.....	11666.25
11178.75	.....	11668.75

11181.25	.....	11681.25
11183.75	.....	11683.75
11186.25	.....	11686.25
11188.75	.....	11688.75
11191.25	.....	11691.25
11193.75	.....	11693.75
11196.25	.....	11696.25
11198.75	.....	11698.75

(3) 3.75 MHz bandwidth channels:

Transmit (receive) (MHz)		Receive (transmit) (MHz)
11133.125	.....	11623.125
11138.125	.....	11628.125
11143.125	.....	11633.125
11148.125	.....	11638.125
11153.125	.....	11643.125
11158.125	.....	11648.125
11163.125	.....	11653.125
11168.125	.....	11658.125
11173.125	.....	11663.125
11178.125	.....	11668.125
11183.125	.....	11683.125
11188.125	.....	11688.125
11193.125	.....	11693.125
11198.125	.....	11698.125

(4) 5 MHz bandwidth channels:

Transmit (receive) (MHz)		Receive (transmit) (MHz)
11132.5	.....	11622.5
11137.5	.....	11627.5
11142.5	.....	11632.5
11147.5	.....	11637.5
11152.5	.....	11642.5
11157.5	.....	11647.5
11162.5	.....	11652.5
11167.5	.....	11657.5
11172.5	.....	11662.5
11177.5	.....	11667.5
11182.5	.....	11682.5
11187.5	.....	11687.5
11192.5	.....	11692.5
11197.5	.....	11697.5

(5) 10 MHz bandwidth channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
10705	11205
10715	11215
10725 /2/	11675 /1/
10735	11225
10745	11235
10755	11245
10765	11255
10775	11265
10785	11275
10795	11285
10805	11295
10815	11305
10825	11315
10835	11325
10845	11335
10855	11345
10865	11355
10875	11365
10885	11375
10895	11385
10905	11395
10915	11405
10925	11415
10935	11425
10945	11435
10955	11445
10965	11455
10975	11465
10985	11475
10995	11485
11005	11495
11015	11505
11025	11515
11035	11525
11045	11535
11055	11545
11065	11555
11075	11565
11085	11575
11095	11585
11105	11595
11115	11605
11125	11615
11135/1/	11625 /2/
11145/1/	11635 /1/
11155/1/	11645 /1/
11165/1/	11655 /1/

11175/1/	.....	11665 /1/
11185/1/	.....	11685 /1/
11195/1/	.....	11695 /1/

/1/ Alternate channels. These channels are set aside for narrow bandwidth systems and should be used only if all other channels are blocked.

/2/ These frequencies may be assigned for unpaired use.

(6) 30 MHz bandwidth channels:

Transmit (receive) (MHz)		Receive (transmit) (MHz)
10715	.....	11215
10755	.....	11245
10795	.....	11285
10835	.....	11325
10875	.....	11365
10915	.....	11405
10955	.....	11445
10995	.....	11485
11035	.....	11525
11075	.....	11565
11115	.....	11605
11155 /1/	.....	11645 /1/
11185 /1/	.....	11685 /1/

/1/ Alternate channels These channels are set aside for narrow bandwidth systems and should be used only if all other channels are blocked.

(7) 40 MHz bandwidth channels:

Transmit (receive) (MHz)		Receive (transmit) (MHz)
10735	.....	11225
10775	.....	11265
10815	.....	11305
10855	.....	11345
10895	.....	11385
10935	.....	11425
10975	.....	11465
11015	.....	11505
11055	.....	11545
11095	.....	11585
11135 /1/	.....	11625 /1/
11175 /1/	.....	11665 /1/

/1/ Alternate channels. These channels are set aside for narrow bandwidth systems and

should be used only if all other channels are blocked.

(l) 12,200-12,700 MHz: The Commission has allocated the 12.2-12.7 GHz band for use by the broadcasting-satellite service. Operational-fixed stations authorized after September 9, 1983 will be licensed on a noninterference basis and are required to make any and all adjustments necessary to prevent interference to operating domestic broadcasting-satellite systems. Notwithstanding any other provisions, no operational-fixed stations are permitted to cause interference to broadcasting-satellite stations of other countries operating in accordance with the Region 2 plan for the broadcasting-satellite service established at the 1983 RARC.

(m) 17700-19700 MHz

Note.—Stations authorized as of September 9, 1983 to use frequencies in this band may, upon proper application, continue to be authorized for such operations.

(1) 2 MHz maximum authorized bandwidth channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
18141.0	n/a

(2) 5 MHz maximum authorized bandwidth channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
18762.5	19102.5
18767.5	19107.5
18772.5	19112.5
18777.5	19117.5
18782.5	19122.5
18787.5	19127.5
18792.5	19132.5
18797.5	19137.5
18802.5	19142.5
18807.5	19147.5
18812.5	19152.5
18817.5	19157.5

(3) 6 MHz maximum authorized bandwidth channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
18145.0	n/a
18151.0	18367.0
18157.0	18373.0
18163.0	18379.0

18169.0	.....	18385.0
18175.0	.....	18391.0
18181.0	.....	18397.0
18187.0	.....	18403.0
18193.0	.....	18409.0
18199.0	.....	18415.0
18205.0	.....	18421.0
18211.0	.....	18427.0
18217.0	.....	18433.0
18223.0	.....	18439.0
18229.0	.....	18445.0
18235.0	.....	18451.0
18241.0	.....	18457.0
18247.0	.....	18463.0
18253.0	.....	18469.0
18259.0	.....	18475.0
18265.0	.....	18481.0
18271.0	.....	18487.0
18277.0	.....	18493.0
18283.0	.....	18499.0
18289.0	.....	18505.0
18295.0	.....	18511.0
18301.0	.....	18517.0
18307.0	.....	18523.0
18313.0	.....	18529.0
18319.0	.....	18535.0
18325.0	.....	18541.0
18331.0	.....	18547.0
18337.0	.....	18553.0
18343.0	.....	18559.0
18349.0	.....	18565.0
18355.0	.....	18571.0
18361.0	.....	18577.0

(4) 10 MHz maximum authorized bandwidth channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
17705.0	..... 19265.0
17715.0	..... 19275.0
17725.0	..... 19285.0
17735.0	..... 19295.0
17745.0	..... 19305.0
17755.0	..... 19315.0
17765.0	..... 19325.0
17775.0	..... 19335.0
17785.0	..... 19345.0
17795.0	..... 19355.0
17805.0	..... 19365.0
17815.0	..... 19375.0

17825.0	.....	19385.0
17835.0	.....	19395.0
17845.0	.....	19405.0
17855.0	.....	19415.0
17865.0	.....	19425.0
17875.0	.....	19435.0
17885.0	.....	19445.0
17895.0	.....	19455.0
17905.0	.....	19465.0
17915.0	.....	19475.0
17925.0	.....	19485.0
17935.0	.....	19495.0
17945.0	.....	19505.0
17955.0	.....	19515.0
17965.0	.....	19525.0
17975.0	.....	19535.0
17985.0	.....	19545.0
17995.0	.....	19555.0
18005.0	.....	18565.0
18015.0	.....	19575.0
18025.0	.....	19585.0
18035.0	.....	19595.0
18045.0	.....	19605.0
18055.0	.....	19615.0
18065.0	.....	19625.0
18075.0	.....	19635.0
18085.0	.....	19645.0
18095.0	.....	19655.0
18105.0	.....	19665.0
18115.0	.....	19675.0
18125.0	.....	19685.0
18135.0	.....	19695.0
18585.0	.....	18925.0
18595.0	.....	18935.0
18605.0	.....	18945.0
18615.0	.....	18955.0
18625.0	.....	18965.0
18635.0	.....	18975.0
18645.0	.....	18985.0
18655.0	.....	18995.0
18665.0	.....	19005.0
18675.0	.....	19015.0
18685.0	.....	19025.0
18695.0	.....	19035.0
18705.0	.....	19045.0
18715.0	.....	19055.0
18725.0	.....	19865.0
18735.0	.....	19075.0
18745.0	.....	19085.0
18755.0	.....	19095.0
18765.0	.....	19105.0
18775.0	.....	19115.0

18785.0	.....	19125.0
18795.0	.....	19135.0
18805.0	.....	19145.0
18815.0	.....	19155.0

(5) 20 MHz maximum authorized bandwidth channels:

Transmit (receive) (MHz)		Receive (transmit) (MHz)
17710.0	.....	19270.0
17730.0	.....	19290.0
17750.0	.....	19310.0
17770.0	.....	19330.0
17790.0	.....	19350.0
17810.0	.....	19370.0
17830.0	.....	19390.0
17850.0	.....	19410.0
17870.0	.....	19430.0
17890.0	.....	19450.0
17910.0	.....	19470.0
17930.0	.....	19490.0
17950.0	.....	19510.0
17970.0	.....	19530.0
17990.0	.....	19550.0
18010.0	.....	19570.0
18030.0	.....	19590.0
18050.0	.....	19610.0
18070.0	.....	19630.0
18090.0	.....	19650.0
18110.0	.....	19670.0
18130.0	.....	19690.0
18590.0	.....	18930.0
18610.0	.....	18950.0
18630.0	.....	18970.0
18650.0	.....	18990.0
18670.0	.....	19010.0
18690.0	.....	19030.0
18710.0	.....	19050.0
18730.0	.....	19070.0
18750.0	.....	19090.0
18770.0	.....	19110.0
18790.0	.....	19130.0
18810.0	.....	19150.0

(6) 40 MHz maximum authorized bandwidth channels:

Transmit (receive) (MHz)		Receive (transmit) (MHz)
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17720.0	19280.0
17760.0	19320.0
17800.0	19360.0
17840.0	19400.0
17880.0	19440.0
17920.0	19480.0
17960.0	.....	19520.0
18000.0	.....	19560.0
18040.0	.....	19600.0
18080.0	.....	19640.0
18120.0	.....	19680.0

(7) 80 MHz maximum authorized bandwidth channels:

Transmit (receive) (MHz)		Receive (transmit) (MHz)
17740.0	.....	19300.0
17820.0	.....	19380.0
17900.0	.....	19460.0
17980.0	.....	19540.0
18060.0	.....	19620.0

(8) The following frequencies are available for point-to-multipoint systems, except that systems licensed, in operation, or applied for in the 10,565-10,615 and 10,630-10,680 MHz bands prior to July 15, 1993 are permitted to use frequencies in those bands if they prior coordinate with 10 GHz point-to-point licensees:

Channel No.	Nodal station	User station
	Frequency band (MHz) limits	Frequency band (MHz) limits
25	18,820-18,830	19,160-19,170
26	18,830-18,840	19,170-19,180
27	18,840-18,850	19,180-19,190
28	18,850-18,860	19,190-19,200
29	18,860-18,870	19,200-19,210

(i) Each station will be limited to one frequency pair per SMSA. Additional channel pairs may be assigned upon a showing that the service to be provided will fully utilize the spectrum requested. A channel pair may be subdivided as desired by the licensee.

(ii) A frequency pair may be assigned to more than one licensee in the same SMSA or service area so long as the interference protection criteria of § 101.105 are met.

(n) 31.0 to 31.3 GHz. These frequencies are shared on a coequal basis with other stations in the fixed and mobile services (see Parts 21, 74, 78 and 95). No interference protection is afforded to fixed or mobile stations operating in this band.

(1) 25 MHz authorized bandwidth channels, 150 MHz separation.

Transmit (receive) (MHz)	Receive (transmit) (MHz)
31,012.5	31,162.5
31,037.5	31,187.5
31,062.5	31,212.5
31,087.5	31,237.5
31,112.5	31,262.5
31,137.5	31,287.5

(2) 50 MHz authorized bandwidth channels, 150 MHz separation.

Transmit (receive) (MHz)	Receive (transmit) (MHz)
31,025.0	31,175.0
31,075.0	31,225.0
31,125.0	31,275.0

(o) Except as provided for in § 101.605, frequencies in bands authorized above 21.2 GHz are not paired and will be as specified in the authorization.

(p) 6425 to 6525 MHz—Mobile. Paired and un-paired operations permitted. Use of this spectrum for direct delivery of video programs to the general public or multi-channel cable distribution is not permitted. This band is co-equally shared with mobile stations licensed pursuant to Parts 21, 74 and 78 of the Commission's Rules. Stations not intended to be operated while in motion will be licensed under the provision of § 101.13(b). The following channel plans apply.

(1) 1 MHz maximum authorized bandwidth channels.

Transmit (or receive) (MHz)	Receive (or transmit) (MHz)
6425.5	6575.5
6450.5	6500.5

(2) 8 MHz maximum authorized bandwidth channels.

Transmit (or receive) (MHz)	Receive (or transmit) (MHz)
6430.0	6480.0

6438.0	6488.0
6446.0	6596.0
6455.0	6505.0
6463.0	6513.0
6471.0	6521.0

(3) 25 MHz maximum authorized bandwidth channels.

Transmit (or receive) (MHz)	Receive (or transmit) (MHz)
6437.5	6487.5
6462.5	6512.5

(q) Fixed systems licensed, in operation, or applied for in the 6525-6875 and 10,550-10,680 MHz bands prior to July 15, 1993 are permitted to use channel plans in effect prior to that date, including adding channels under those plans.

(r) Frequency diversity transmission will not be authorized in this service in the absence of a factual showing that the required communications cannot practically be achieved by other means. Where frequency diversity is deemed to be justified on a protection channel basis, it must be limited to one protection channel for the bands 3700-4200, 5925-6425, and 6525-6875 MHz, and a ratio of one protection channel for three working channels for the bands 10,550-10,680 and 10,700-11,700 MHz. In the bands 3700-4200, 5925-6425, and 6525-6875 MHz, no frequency diversity protection channel will be authorized unless there is a minimum of three working channels, except that where a substantial showing is made that a total of three working channels will be required within three years, a protection channel may be authorized simultaneously with the first working channel. A protection channel authorized under such exception will be subject to termination if applications for the third working channel are not filed within three years of the grant date of the applications for the first working channel. Where equipment employing digital modulation techniques with cross-polarized operation on the same frequency is used, the protection channel authorized under the above conditions may be considered to consist of both polarizations of the protection frequency where such is shown to be necessary.

§ 101.607 Maximum authorized bandwidth

The maximum bandwidth which will be authorized per frequency assigned is set out in the table that follows. Regardless of the maximum authorized bandwidth specified for each frequency band, the Commission reserves the right to issue a license for less than the maximum bandwidth if it appears that a lesser bandwidth would be sufficient to support an applicant's intended communications.

Frequency band MHz	Maximum authorized bandwidth
928-929	12.5, 25 kHz /1/ /6/
932-932.5, 941-941.5	12.5 kHz /1/
932.5-935, 941.5-944	25, 50, 100, 200 kHz /1/
952-960	12.5, 25, 50, 100, 200 kHz /1/ /5/
1850-1990 MHz	5 or 10 MHz /1/
2130-2150 MHz	800 or 1600 kHz /1/
2150-2160 MHz	10 MHz
2180-2200 MHz	800 or 1600 kHz /1/

2450-2483.5	625 kHz /2/
2483.5-2500	800 kHz
6425-6525	25
6525-6875 MHz	5 or 10 MHz /1/
10,550-10,680	5
12,200 to 12,700	10 or 20 1
13,200 to 13,250	25
17,700 to 18,140	80
18,140 to 18,142	2
18,142 to 18,580	6
18,580 to 18,820	20
18,820 to 18,920	10
18,920 to 19,160	20
19,160 to 19,260	10
19,260 to 19,700	80
21,200-23,600 MHz	up to 100 MHz /4/
31,000 to 31,300	25 or 50 MHz
38,600-40,000 MHz	up to 50 MHz
Bands above 40,000 MHz	/3/

/1/ The maximum bandwidth that will be authorized for each particular frequency in this band is detailed in the appropriate frequency table in § 101.605.

/2/ 1250 kHz, 1875 kHz, or 2500 kHz on a case-by-case basis.

/3/ To be specified in authorization.

/4/ For exceptions see § 101.605(m).

/5/ A 12.5 bandwidth applies only to frequencies listed § 101.605(a)(1).

/6/ For frequencies listed in § 101.605(a)(1), consideration will be given on a case-by-case basis to authorizing bandwidths up to 50 kHz.

§ 101.609 Technical standards for stations authorized prior to July 1, 1976. Except as otherwise required by § 101.605(a)(1), the technical standards in this section apply to private microwave systems that were authorized between July 20, 1961, and July 1, 1976. These standards are not applicable to transmitting equipment, including antennas, authorized to be operated prior to July 20, 1961, or for which an authorization was issued based on an application filed with the Commission prior to July 20, 1961.

Microwave Technical Standards Table

Frequency band-- megahertz	Power /1/ (watts)	Tolerance (percent)	Bandwidth /2/	Beamwidth /3/ (degrees)
952-960	/7/ 30	0.0005	100 kHz	/6/ 20
1850-1960	18	.02	8 MHz	10
2130-2150	15	.001	800 kHz	10
2150-2160	15	.001	10 MHz	360
2180-2200	15	.001	800 kHz	10
2450-2500 /4/	12	/5/	/5/	/5/
6525-6575	7	.02	25 MHz	7
6575-6875	7	.02	10 MHz	5
10550-10680	5	/5/	25 MHz	4
12200-12700	5	.05	20 MHz	4
Above 16000	5	/5/	50 MHz	/5/

/1/ Maximum rated power output of transmitter. Power in excess of that shown herein will be authorized only if specifically provided on a particular frequency or under exceptional circumstances based upon a factual showing of need. For pulsed systems average power is limited to the values shown, peak power must not exceed five times this limit.

/2/ Maximum bandwidth (necessary or occupied, whichever is greater) which will be authorized. Except in the 2130-2150 and 2180-2200 MHz bands, consideration will be given, on a case-by-case basis, to requests for additional adjacent channels based upon a complete and specific factual showing of unique or unusual circumstances, apart from economic considerations, requiring such additional channels. In the band 952-960 MHz, bandwidths up to 500 kHz may be authorized.

/3/ Maximum beamwidth of major lobe between 0.5 power points in horizontal plane. Exceptions may be granted for stations in remote areas or until harmful interference is caused to other stations operating in accordance with these provisions.

/4/ Subject to no protection from ISM equipment on 2450 MHz.

/5/ To be specified in the station authorization. Stations authorized in the band 2500-2690 MHz prior to July 16, 1971, may continue to be authorized on a coequal basis to other stations operating in accordance with the Table of Frequency allocations. No expansion of existing systems on frequencies not allocated to this service will be permitted. Additional stations or new assignments may be authorized only in accordance with the provisions of this section.

/6/ Except for the frequencies 952.1, 952.2, 952.3, 952.4, 956.4, 956.5, 959.8, and 959.9 MHz where the antenna may be omnidirectional, and except for the frequencies 952.8, 952.9, 956.2, and 956.3 MHz which may be used only with directional antennas with a minimum gain of 7.5 dBd in the major lobe and no more than -3 dBd gain in any direction 90° or more off the axis of the major lobe.

/7/ Except for the frequencies 952.4, 952.2, 952.3, 952.4, 956.4, 956.5, 959.8, and 959.9 MHz where the maximum power may be 100W.

Subpart I—Point-to-Point Microwave Radio Service

§ 101.701 Eligibility.

(a) Authorizations for stations in this service will be issued to existing and proposed common carriers. Applications will be granted only in cases in which it is shown that:

(1) The applicant is legally, technically, financially and otherwise qualified to render the proposed service;

(2) There are frequencies available to enable the applicant to render a satisfactory service; and

(3) The public interest, convenience, and necessity would be served by a grant thereof.

(b) If the content is originated, selected, controlled, or otherwise substantively influenced by the applicant, licensee, or a closely affiliated entity, no station or radio frequency in this service will be authorized, or may be utilized, to transmit any closed circuit television signals or television signals other than broadcast television signals, unless:

(1) Such service is otherwise permitted for a specific length of time by grant of an acceptable petition for waiver of this rule; or

(2) Such service is otherwise permitted by a condition in the applicable instrument of authorization; or

(3) Such service is provided pursuant to applicable FCC tariff and is temporary and occasional intra-company television communication for management, network supervision, or other internal carrier functions.

For purposes of this paragraph, an entity will be considered to be "closely affiliated" with an applicant if it is in a parent-subsidiary relationship, or both are commonly controlled, or they have any common officers or management employees.

(c) Applications for stations or frequencies that will be used primarily to relay broadcast television signals must include a demonstration (including appropriate system diagrams and tables) that at least fifty percent of the customers (or points of service) on the microwave system involved, including those served through an interconnecting carrier(s), receiving applicant's service, will not be related or affiliated in any degree with the applicant, and that the proposed usage by such customers, in terms of hours of use and channels delivered, must constitute at least fifty percent of the usage of the applicant's microwave service. Applications that do not contain these demonstrations will be returned as unacceptable for filing.

§ 101.703 Frequencies.

(a) Frequencies in the following bands are available for assignment to fixed radio stations in the Point-to-Point Microwave Radio Service.

932.5-935 MHz /17/	13,200-13,250 MHz /4/
941.5-944 MHz /17/ /18/	17,700-18,820 MHz /5/ /10/ /15/
2,110-2,130 MHz /1/ /3/ /7/ /20/	18,920-19,160 MHz /5/ /10/ /15/
2,160-2,180 MHz /1/ /2/ /20/ /21/	19,260-19,700 MHz /5/ /10/ /15/
3,700-4,200 MHz /8/ /14/	21,200-22,000 MHz /4/ /11/ /12/ /13/
5,925-6,425 MHz /6/ /14/	22,000-23,600 MHz /4/ /11/ /12/
6,525-6,875 MHz /14/	27,500-29,500 MHz /5/
10,550-10,680 MHz /19/	31,000-31,300 MHz /16/
10,700-11,700 MHz /8/ /9/ /19/	38,600-40,000 MHz /4/

/1/ Frequencies in this band are shared with control and repeater stations in the Domestic Public Land Mobile Radio Service and with stations in the International Fixed Public Radiocommunication Services located south of 25° 30' north latitude in the State of Florida and U.S. possessions in the Caribbean area. Additionally, the band 2160-2162 MHz is shared with stations in the Multipoint Distribution Service.

/2/ Except upon a showing that no alternative frequencies are available, no new assignments will be made in the band 2160-2162 MHz for stations located within 80.5 kilometers (50 miles) of the coordinates of the cities listed in § 21.901(c) of this chapter.

/3/ Television transmission in this band is not authorized and radio frequency channel widths may not exceed 3.5 MHz.

/4/ Frequencies in this band are shared with fixed and mobile stations licensed in other services.

/5/ Frequencies in this band are shared with stations in the fixed- satellite service.

/6/ These frequencies are not available for assignment to mobile earth stations.

/7/ Frequencies in the band 2110-2120 MHz may be authorized on a case-by- case basis to Government or non-Government space research earth stations for telecommand purposes in connection with deep space research.

/8/ This frequency band is shared with station(s) in the Local Television Transmission Service and, in the U.S. Possessions in the Caribbean area, with stations in the International Fixed Public Radiocommunications Services.

/9/ The band segments 10.95-11.2 and 11.45-11.7 GHz are shared with space stations (space to earth) in the fixed-satellite service.

/10/ This band is co-equally shared with stations in the fixed services under Parts 74, 78, and 101 of the Commission's Rules.

/11/ Frequencies in this band are shared with Government stations.

/12/ Assignments to common carriers in this band are normally made in the segments 21.2-21.8 GHz and 22.4-23.0 GHz and to operational fixed users in the segments 21.8-22.4 GHz and 23.0-23.6 GHz. Assignments may be made otherwise only upon a showing that no interference free frequencies are available in the appropriate band segments.

/13/ Frequencies in this band are shared with stations in the earth exploration satellite service (space to earth).

/14/ Frequencies in this band are shared with stations in the fixed-satellite and private-operational fixed microwave services.

/15/ Stations licensed as of September 9, 1983 to use frequencies in the 17.7-19.7 GHz band may, upon proper application, continue to be authorized for such operation.

/16/ Frequencies in this band are co-equally shared with stations in the Auxiliary Broadcasting (Part 74), Cable Television Relay (Part 78), Private Operational-Fixed Microwave (Subpart H) and General Mobile Radio (Part 95) Services.

/17/ Frequencies in these bands are shared with Government fixed stations and stations in the Private Operational-Fixed Microwave Service (Subpart H).

/18/ Frequencies in the 942 to 944 MHz band are also shared with broadcast auxiliary stations (Part 74).

/19/ Frequencies in this band are shared with stations in the private-operational fixed microwave service.

/20/ New facilities in these bands will be licensed only on a secondary basis. Facilities licensed or applied before January 16, 1992, are permitted to make modifications and minor extensions and retain their primary status.

/21/ Any authorization of additional stations to use the 2160-2162 MHz band for Multipoint Distribution Service applied for after January 16, 1992 will be secondary to use of the band for emerging technology services.

(b) Applications for new stations or frequency paths (except for power splits of existing frequency paths)

in the bands 3,700-4,200 MHz and 5,925- 6,425 MHz which are to be used to relay television signals to community antenna television systems will not be accepted for filing or granted: Provided, however, That waivers of this provision may be granted for good cause shown, including a showing that the proposed frequency usage is not likely to affect adversely the development of any major communications route; and Provided further, That such waivers will not be granted, absent a showing of compelling and unusual circumstances, for new stations or frequency paths (except for power splits of existing frequency paths) within 80.5 kilometers (50 miles) of the coordinates of the principal city, as set forth in the U.S. Department of Commerce publication "Air Line Distance Between Cities in the United States," of one of the top 25 standard metropolitan statistical areas, as ranked by the U.S. Census Bureau.

- (c) 932.5-935 MHz and 941.5-944 MHz. 200 kHz maximum authorized bandwidth, 9 MHz separation:
 (1) 25 kHz bandwidth channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
932.5125	941.5125
932.5375	941.5375
932.5625	941.5625
932.5875	941.5875
932.6125	941.6125
932.6375	941.6375
932.6625	941.6625
934.8375	943.8375
934.8625	943.8625
934.8875	943.8875
934.9125	943.9125
934.9375	943.9375
934.9625	943.9625
934.9875	943.9875

- (2) 50 kHz channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
932.7000	941.7000
932.7500	941.7500
934.8000	943.8000

- (3) 100 kHz channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
932.8250	941.8250
932.9250	941.9250
933.0250	942.0250
934.5250	943.5250

934.6250 943.6250
 934.7250 943.7250

(4) 200 kHz channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
933.1750	942.1750
933.3750	942.3750
933.5750	942.5750
933.7750	942.7750
933.9750	942.9750
934.1750	943.1750
934.3750	943.3750

(d) 3.700 to 4.200 MHz. 20 MHz maximum authorized bandwidth.

20 MHz bandwidth channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
3710	3750
3730	3770
3790	3830
3810	3850
3870	3910
3890	3930
3950	3990
3970	4010
4030	4070
4050	4090
4110	4150
4130	4170
n/a	4190 /1/

/1/ This frequency may be assigned for unpaired use.

(e) 5.925 to 6.425 MHz. 30 MHz authorized bandwidth.

(1) 400 kHz bandwidth channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
5925.225	6177.100

5925.625	.....	6177.500
5926.050	.....	6177.925
5926.450	.....	6178.325
5926.875	.....	6178.750
5927.275	.....	6179.150
5927.725	.....	6179.600
5928.125	.....	6180.000
5928.550	.....	6180.425
5928.950	.....	6180.825
5929.375	.....	6181.250
5929.775	.....	6181.650
6168.350	.....	6420.225
6168.750	.....	6420.625
6169.175	.....	6421.050
6169.575	.....	6421.450
6170.000	.....	6421.875
6170.400	.....	6422.275
6170.850	.....	6422.725
6171.250	.....	6423.125
6171.675	.....	6423.550
6172.075	.....	6423.950
6172.500	.....	6424.375
6172.900	.....	6424.775

(2) 800 kHz bandwidth channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
5925.425	..... 6177.300
5926.250	..... 6178.125
5927.075	..... 6178.950
5927.925	..... 6179.800
5928.750	..... 6180.625
5929.575	..... 6181.450
6168.550	..... 6420.425
6169.375	..... 6421.250
6170.200	..... 6422.075
6171.050	..... 6422.925
6171.875	..... 6423.750
6172.700	..... 6424.575

(3) 1.25 MHz bandwidth channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
5925.625	..... 6177.500

5926.875	.....	6178.750
5928.125	.....	6180.000
5929.375	.....	6181.250
6108.893	.....	6360.933
6110.128	.....	6362.168
6111.364	.....	6363.404
6112.599	.....	6364.639
6113.834	.....	6365.874
6115.070	.....	6367.110
6116.305	.....	6368.345
6117.541	.....	6369.581
6118.776	.....	6370.816
6120.011	.....	6372.051
6121.247	.....	6373.287
6122.482	.....	6374.522
6123.718	.....	6375.758
6124.953	.....	6376.993
6126.189	.....	6378.229
6127.424	.....	6379.464
6128.659	.....	6380.699
6129.895	.....	6381.935
6131.130	.....	6383.170
6132.366	.....	6384.406
6133.601	.....	6385.641
6134.836	.....	6386.876
6136.072	.....	6388.112
6137.307	.....	6389.347
6138.543	.....	6390.583
6139.778	.....	6391.818
6141.014	.....	6393.054
6142.249	.....	6394.289
6143.484	.....	6395.524
6144.720	.....	6396.760
6145.955	.....	6397.995
6147.191	.....	6399.231
6148.426	.....	6400.466
6149.661	.....	6401.701
6150.897	.....	6402.937
6152.132	.....	6404.172
6153.368	.....	6405.408
6154.603	.....	6406.643
6155.839	.....	6407.879
6157.074	.....	6409.114
6158.309	.....	6410.349
6159.545	.....	6411.585
6160.780	.....	6412.820
6162.016	.....	6414.056
6163.251	.....	6415.291
6164.486	.....	6416.526
6165.722	.....	6417.762
6166.957	.....	6418.997
6168.750	.....	6420.625

6170.000	.....	6421.875
6171.250	.....	6423.125
6172.500	.....	6424.375
6173.750	1	n/a
6175.000	1	n/a
6176.250	1	n/a

1 - These frequencies may be assigned for unpaired use.

(4) 2.5 MHz bandwidth channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
5926.250	..... 6178.125
5928.750	..... 6180.625
6109.510	..... 6361.550
6111.981	..... 6364.021
6114.452	..... 6366.492
6116.923	..... 6368.963
6119.394	..... 6371.434
6121.865	..... 6373.905
6124.335	..... 6376.375
6126.806	..... 6378.846
6129.277	..... 6381.317
6131.748	..... 6383.788
6134.219	..... 6386.259
6136.690	..... 6388.730
6139.160	..... 6391.200
6141.631	..... 6393.671
6144.102	..... 6396.142
6146.573	..... 6398.613
6149.044	..... 6401.084
6151.515	..... 6403.555
6153.985	..... 6406.025
6156.456	..... 6408.496
6158.927	..... 6410.967
6161.398	..... 6413.438
6163.869	..... 6415.909
6166.340	..... 6418.380
6169.375	..... 6421.250
6171.875	..... 6423.750
6175.625 /1/	..... n/a

/1/ This frequency may be assigned for unpaired use.

(5) 3.75 MHz bandwidth channels:

Transmit	Receive
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